

REMARKS

Claims 1-8, 17-28 and 37-44 were previously pending. By this Amendment, Claims 1, 2, 4, 8, 17 and 37 have been amended. Claims 3 and 23 have been canceled. Claims 9-16 and 29-36 have been withdrawn. No new matter has been added. Accordingly, Claims 1-2, 4-8, 17-22, 24-28 and 37-44 are at issue.

Remarks Concerning Applicants' Election

In the March 29, 2005 Office Action, the Examiner found that the Application contains claims directed to two patentably distinct inventions, and requested that Applicants elect to pursue one of the inventions. Applicants elected to pursue "Group I", namely Claims 1-8, 17-28 and 37-44. The non-elected claims, 9-16 and 29-36, are hereby withdrawn.

Remarks Concerning the Drawings

On page 2 of the May 31, 2005 Office Action, the Examiner objected to Figures 1, 3 and 4 of the Application because the blocks in the block diagrams of those figures do not have descriptive labels in English. Submitted herewith are three pages of corrected drawing sheets, each complying with the requirements of 37 C.F.R. § 1.84(c). Applicants respectfully submit no new matter is added by these amendments. In light of the amendments made to the drawings, Applicants respectfully request that the objection to the drawings be withdrawn.

Remarks Concerning Rejections Under 35 U.S.C. § 102

On page 4 of the May 31, 2005 Office Action, the Examiner rejected Claims 1, 17, 18 and 37 as being anticipated by U.S. Patent No. 5,828,672 to Labonte et al. ("Labonte"). In light of the amendments made herein, Applicants respectfully traverse that rejection.

The present invention is drawn to a system for improving communication throughout a network. The network has a module capable of changing state, and in response to that change,

transmitting a message. The system comprises detecting an error, calculating a bit error rate and calculating a residual error probability. Lastly, based on the residual error probability, the system retransmits a first type of messages and shortens the length of that type of messages, while neither retransmitting nor shortening the length of a second type of messages. Claims 1 and 17 are herein amended to clarify that final step. Claim 37 is drawn to a slightly different embodiment, namely an action to correct the message transmission wherein the corrective action is executed in response to the change of state of the module.

Labonte, in contrast, is directed to a system for determining when a radio telecommunications network should switch between first and second grades of service. As the Examiner acknowledged on pages 6 and 8 of the May 31, 2005 Office Action, Labonte does not disclose retransmitting messages (p. 6) or shortening the length of messages (p. 8). Independent Claims 1 and 17 have been herein amended to include both of those limitations. Claim 18 is dependent on Claim 17, and therefore includes the limitations rendering Claim 17 patentable over Labonte. Accordingly, Applicants respectfully submit that Claims 1, 17 and 18 are patentable over Labonte, and requests that the § 102 rejection of those claims be withdrawn.

With respect to Claim 37, Applicants respectfully submit that Labonte fails to disclose a corrective action based on the change of state of an input/output ("I/O") module. Labonte is directed to radio communication system. Even if the "radio" of Labonte is characterized as an "I/O module" of the present invention, Labonte still fails to disclose a corrective action based on a change in state of the radio system. Claim 37, in contrast, calls for executing a corrective action to overcome the estimated bit error rate, wherein the corrective action is in response to the change of state of the I/O module. Applicants therefore respectfully submit that Labonte does not disclose each limitation of Claim 37, and therefore request that the § 102 rejection of Claim 37 based on that reference be withdrawn.

Remarks Concerning Rejections Under 35 U.S.C. § 103

U.S. Patent No. 5,828,672 to Labonte et al. ("Labonte")

On page 6 of the May 31, 2005 Office Action, the Examiner rejected Claims 2, 22 and 38 as being unpatentable over Labonte. In light of the amendments made herein, Applicants respectfully traverse that rejection.

As noted *supra* and as acknowledged by the Examiner on pages 6 and 8 of the May 31, 2005 Office Action, Labonte does not disclose retransmitting or shortening the length of a message in response to a bit error rate. Claims 1 and 17 have been amended to include both of those limitations, and are therefore patentable over Labonte. Claims 2 and 22 depend on Claims 1 and 17, respectively, and therefore include all of the limitations rendering Claims 1 and 17 patentable over Labonte. Accordingly, Applicants respectfully submit that Claims 2 and 22 are also patentable over Labonte, and respectfully request that the § 103 rejection of Claims 2 and 22 based on that reference be withdrawn.

With respect to Claim 38, as noted *supra*, Labonte does not disclose executing a corrective action in response to a change of state of an I/O module. Claim 37 includes that limitation, and is therefore patentable over Labonte. Claim 38 is dependent on Claim 37, and thus includes the limitations that render Claim 37 patentable over Labonte. Accordingly, Applicants respectfully submit that Claim 38 is also patentable over Labonte, and respectfully request that the § 103 rejection of Claim 38 based on Labonte be withdrawn.

Labonte in view of Wicker in further view of U.S. Patent No. 5,926,232 to Mangold et al. ("Mangold")

On page 7 of the May 31, 2005 Office Action, the Examiner rejected Claims 3, 5-8, 19-21, 25-28, 39 and 41-44 as being unpatentable over Labonte in view of the article "Error Control Systems for Digital Communication and Storage" by Wicker ("Wicker") and in further view of Mangold. In light of the amendments made herein, Applicants respectfully traverse that rejection.

Wicker teaches an error control system for digital communication. However, as the Examiner noted on page 8 of the May 31, 2005 Office Action, neither Wicker nor Labonte disclose shortening the length of a message to improve network communication. Claims 1 and 17, as amended, include that limitation.

Mangold fails to cure the deficiencies of Labonte and Wicker. Mangold is directed to a method for optimizing the transmission of signals over a channel with a predetermined channel data rate. To correct for errors in bit data, Mangold includes "redundant bits"; i.e., transmitting copy bits in case some bits are lost. As the Examiner observed on page 8 of the May 31, 2005 Office Action, Mangold involves a fixed block transmission system, in which all of the data transmissions in the system are of a predetermined length. The Examiner opined that Mangold discloses shortening the length of a message because, "changing the error correction code change the length in of the message in a fixed block transmission system since more redundant bits translates to less message bits" (p. 8).

However, Mangold does not teach or suggest shortening the length of a message in response to a residual bit error rate. Mangold merely discloses that a data message can be duplicated in a single transmission, so as to provide a redundant message that is less prone to bit errors. That is not the same thing as retransmitting a shorter message, as disclosed in the present invention.

Moreover, Mangold teaches away from shortening the length of a data message. Mangold is directed to a fixed-rate transmission system, in which each data message is of fixed and equal length. It is therefore not possible to shorten the length of a data message in Mangold, because all data messages in Mangold are of the same predetermined length.

Furthermore, neither Mangold, Labonte nor Wicker discloses shortening the length of a particular *type* of message and retransmitting a particular *type* of message. Claims 1 and 17 of the present application, as amended, call for retransmitting and shortening the length of a first type of messages, while neither retransmitting nor shortening the length of a second type of messages. The Application as originally filed discloses different types of messages communicated via the network. For example, the messages can be trigger signals (p. 4), which instruct an I/O module to perform an action, or the messages can be change of state messages (p. 6), which indicate that the I/O module has changed state, or instruct the I/O module to change

state. Claims 1 and 17 make clear that based upon the residual bit error rate, messages of a first type (for example, trigger signals) are shortened in length and retransmitted, whereas messages of a second type (for example, change of state messages) are neither shortened in length nor retransmitted.

Wicker and Mangold do not disclose different types of messages, and Labonte does not disclose shortening the length of a type of message. None of the references, either alone or in combination, disclose the retransmission and shortening of a message based on the type of that message. Applicants therefore respectfully submit that Claims 1 and 17, as amended, are patentably distinct over Labonte, Wicker and Mangold, and request that the § 103 rejection based on those references be withdrawn.

Claims 3 and 5-8 are dependent on Claim 1, and Claims 19-21 and 25-28 are dependent on Claim 17, and thus the dependent claims include the limitations rendering Claims 1 and 17 patentable over the cited references. Accordingly, Applicants respectfully submit that Claims 3, 5-8, 19-21 and 25-28 are patentable over Labonte, Wicker and Mangold for the same reasons as are Claims 1 and 17. Applicants thus respectfully request that the § 103 rejection of those claims based on Labonte, Wicker and Mangold be withdrawn.

The Examiner also rejected Claims 39 and 41-44 as being unpatentable over the same combination of Labonte, Wicker and Mangold. Those claims are dependent on Claim 37, which calls for a corrective action to be taken in response to a residual bit error rate and also in response to a *change in state of an I/O module*. None of the references cited by the Examiner disclose a corrective action taken in response to a change in state of an I/O module. Applicants respectfully submit that Claim 37 is therefore patentable over the combination of Labonte, Wicker and Mangold. Dependent Claims 39 and 41-44 include the limitations of Claim 37, and are therefore patentable over the cited references for the same reasons. Applicants therefore respectfully request that all of the § 103 rejections based on Labonte, Wicker and Mangold be withdrawn.

Applicants further respectfully submit that the combination of Labonte and Mangold is improper because there is no motivation or incentive in the prior art to combine those references in the manner suggested by the Examiner. See *In re Napier*, 55 F.3d 610, 613; 34 U.S.P.Q.2d 1782, 1785 (Fed. Cir. 1995). Obviousness can only be established by combining or modifying

the teachings of the prior art to produce the claimed invention where a teaching, suggestion or motivation to do so is found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. *In re Fine*, 837 F.2d 1071; 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988); *In re Jones*, 958 F.2d 347; 21 U.S.P.Q.2d 1941 (Fed. Cir. 1992).

The teaching or suggestion to make the claimed combinations and a reasonable expectation of success of that combination must both be found in the prior art, not in the applicant's disclosure, *In re Vaeck*, 947 F.2d 488; 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). The Examiner bears the initial burden of factually supporting any prima facie conclusion of obviousness, MPEP § 2142. In the present case, the Examiner has failed to meet that burden. Instead, the Examiner has simply concluded one skilled in the art would make the suggested modification. That is insufficient.

The Examiner has opined that there is an incentive to combine Labonte/Wicker with Mangold because "use of corrective action comprises shortening the length of the message would have provided means for adaptively changing error correction capabilities" (p. 8, May 31, 2005 Office Action). However, that incentive is not found in any of the cited references. It is instead simply a hindsight determination, which is an improper foundation upon which to combine references.

Hindsight combination of references, using the present invention as a roadmap, is improper. It is well recognized that the claimed invention cannot be used as an instruction manual or template to piece together the teachings of the prior art in an attempt to render the claimed invention obvious, *In re Fritch*, 972 F.2d 1260, 1266 (Fed. Cir. 1992). Applicants therefore respectfully submit that the combination of the Labonte and Mangold references is improper.

Labonte in view of Wicker

On page 7 of the May 31, 2005 Office Action, the Examiner rejected Claim 3 as being unpatentable over Labonte in view of Wicker. Claim 3 has been canceled, thereby rendering moot the Examiner's rejection of Claim 3.

Labonte in view of Wicker in view of U.S. Patent No. 5,933,111 to Schroeder et al.
("Schroeder")

On page 13 of the May 31, 2005 Office Action, the Examiner rejected Claims 4, 24 and 40 as being unpatentable over Labonte in view of Wicker and in further view of Schroeder. In light of the amendments made herein, Applicants respectfully traverse that rejection.

As noted *supra* and as observed by the Examiner on pages 6 and 8 of the May 31, 2005 Office Action, neither Labonte nor Wicker discloses retransmitting or shortening the length of messages in response to a bit error rate.

Schroeder fails to cure the deficiencies of Labonte and Wicker. Schroeder is directed to an apparatus and method for detecting an antenna mispointing condition of an earth station. Schroeder does not disclose shortening the length of a message based on a bit error rate, nor does Schroeder disclose retransmitting a message based on a bit error rate. None of the Labonte, Wicker or Schroeder references, either alone or in combination, disclose detecting a bit error rate, and based on that rate, retransmitting and shortening the length of a type of messages. Claims 1 and 17 include both of those limitations. Claims 4 and 24 are dependent on Claims 1 and 17, respectively, and therefore include the limitations rendering Claims 1 and 17 patentable over Labonte, Wicker and Schroeder. Accordingly, Applicants respectfully submit that Claims 4 and 24 are patentable over those references for the same reasons, and respectfully request that the § 103 rejection of Claims 4 and 24 based on those references be withdrawn.

With respect to Claim 40, none of the cited references discloses a corrective action executed on a type of messages in response to a change in state of an I/O module. As noted *supra*, Labonte and Wicker do not disclose detecting a change of state of an I/O module, and therefore do not disclose executing a corrective action based on the detected change of state. Schroeder fails to cure that deficiency; like Labonte and Wicker, Schroeder does not disclose detecting a change of state of an I/O module. Claim 37 includes that limitation, and is therefore patentable over Labonte, Wicker and Schroeder. Claim 40 is dependent on Claim 37, and therefore includes the limitations rendering Claim 37 patentable over those references. Accordingly, Applicants respectfully submit that Claim 40 is patentable over Labonte, Wicker

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and Schroeder for the same reasons, and respectfully request that the § 103 rejection of Claim 40 based on those references be withdrawn.

CONCLUSION

In light of the remarks made herein, Applicants respectfully submits that Claims 1-2, 4-8, 17-22, 24-28 and 37-44 are in condition for allowance. Applicants respectfully request that the Examiner withdraw the rejections and allow the claims to issue. If it may be of assistance to contact the undersigned attorney regarding the present invention, the Examiner is invited to do so. The Commissioner is hereby authorized to charge Deposit Account No. 23-0280 in connection with any fees associated herewith.

Respectfully submitted,

Dated: July 29, 2005

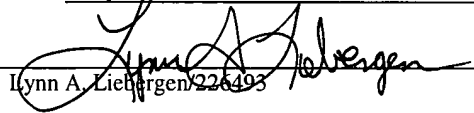
By: 

Richard C. Himelhoch, Reg. No. 35,544
Wallenstein Wagner & Rockey, Ltd.
311 South Wacker Drive, 53rd Floor
Chicago, Illinois 60606-6630
312.554.3300

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on July 29, 2005


Lynn A. Lieberman 226493